

WHAT IS CLAIMED IS:

- 1           1.     A fan array fan section in an air-handling system comprising:  
2           (a)     at least three fan units;  
3           (b)     said at least three fan units arranged in a fan array;  
4           (c)     an air-handling compartment within which said fan array of fan units  
5                    is positioned; and  
6           (d)     an array controller for controlling said at least three fan units to run  
7                    at substantially peak efficiency.

1           2.     The fan array fan section in an air-handling system of claim 1,  
2 wherein said at least three fan units are plenum fans.

1           3.     The fan array fan section in an air-handling system of claim 1,  
2 wherein said air-handling compartment has an airway path, said airway path being less  
3 than 72 inches.

1           4.     The fan array fan section in an air-handling system of claim 1,  
2 wherein said at least three fan units are a plurality of fan units arranged in a fan array  
3 configuration selected from the group consisting of:

- 4           (a)     a true array configuration;  
5           (b)     a spaced pattern array configuration;  
6           (c)     a checker board array configuration;  
7           (d)     rows slightly offset array configuration;  
8           (e)     columns slightly offset array configuration; and  
9           (f)     a staggered array configuration.

1           5.     The fan array fan section in an air-handling system of claim 1,  
2 wherein said at least three fan units are plenum fans include at least two vertically  
3 arranged fan units.



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13. The fan array fan section in an air-handling system of claim 11,  
wherein said plurality of fan units are plenum fans.

14. The fan array fan section in an air-handling system of claim 11,  
wherein said air-handling compartment has an airway path, said airway path being less  
than 72 inches.

15. The fan array fan section in an air-handling system of claim 11,  
wherein said plurality of fan units are arranged in a fan array configuration selected from  
the group consisting of:

- (a) a true array configuration;
- (b) a spaced pattern array configuration;
- (c) a checker board array configuration;
- (d) rows slightly offset array configuration;
- (e) columns slightly offset array configuration; and
- (f) a staggered array configuration.

16. The fan array fan section in an air-handling system of claim 11,  
wherein each of said plurality of fan units is positioned within a fan unit chamber.

17. The fan array fan section in an air-handling system of claim 11,  
wherein each of said plurality of fan units is suspended within a fan unit chamber such  
that there is an air relief passage therebelow.

18. The fan array fan section in an air-handling system of claim 11,  
wherein each of said plurality of fan units is positioned within a fan unit chamber having  
at least one insulation surface.

1                    19.    The fan array fan section in an air-handling system of claim 11,  
2 wherein each of said plurality of fan units is mounted in a grid system.  
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1                    20.    The fan array fan section in an air-handling system of claim 11,  
2 wherein each of said plurality of fan units has a fan wheel diameter, wherein spacing  
3 between said plurality of fan units is less than 60% of said fan wheel diameter.  
4